

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 3(e). This sheet, which includes Fig. 3(a)-3(e), replaces the original sheet including Fig. 3(a)-3(e).

Attachment: Replacement Sheet (1)

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-13 are presently pending in this application, Claims 1-6 having been amended and Claims 7-13 having been added by the present amendment.

In the outstanding Office Action, the drawings were objected to because of informalities; Claims 5 and 6 were objected to for being improper; Claims 1-4 were rejected under 35 U.S.C. §112, second paragraph, for being indefinite; and Claims 1-4 were rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over WO 03/080218 (hereinafter “WO ‘218”).

In response to the objection to the drawings, submitted herewith is a separate LETTER SUBMITTING REPLACEMENT DRAWING SHEET(S), submitting for approval changes to Figure 3(e). Specifically, Figure 3(e) has been designated by a legend “Prior Art” as required by the Examiner.

Claims 1-6 have been amended for clarification and Claims 7-13 have been newly added herein. These amendments and additions in the claims are believed to address the rejection under 35 U.S.C. §112, second paragraph, and the objection for improper multiple dependencies, and thus the pending claims are believed to be in compliance with the requirements of the statute and rules. Also, the amendments are not believed to narrow their original scopes, and no new matter is believed to be added in the pending claims. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Before addressing the rejection based on the cited references, a brief review of Claim 1 is believed to be helpful. Claim 1 is directed to a pillar-shaped honeycomb structural body and recites: “a porous ceramic body in which a plurality of through holes are formed in

parallel with one another in a length direction of the porous body and a partition wall portion is interposed between the through holes, the porous body having an inlet side and an outlet side, wherein said plurality of through holes includes a group of inlet-side through holes sealed by plugs at the outlet side and a group of outlet-side through holes sealed by plugs at the inlet side, the inlet-side through holes have the total sum of cross section areas perpendicular to the length direction which is made relatively greater, the outlet-side through holes have the total sum of cross section areas perpendicular to the length direction which is made relatively smaller, and the inlet-side through holes and the plugs sealing the inlet-side through hole at the outlet side satisfy inequalities, $0.0157X - 0.0678 < Y < 1.15X - 5$ and $35 \leq X \leq 60$, where X represents an aperture rate on the inlet side in %, and Y represents the total sum of thermal capacities in J/K of the plugs sealing the inlet-side through holes at 500°C per 11.8 cm² of an end face of the ceramic body on the outlet side including the outlet-side through holes.”

By providing such plugs sealing the inlet-side through holes, the honeycomb structural body of Claim 1 is effectively prevented from cracking despite the particulates accumulated unevenly toward the outlet side in the inlet-side through holes. That is, when a honeycomb structural body has inlet-side through holes plugged at the outlet side and outlet-side through holes plugged at the inlet side, and the inlet-side through holes have a relatively greater total sum of cross section areas while the outlet-side through holes have a relatively smaller total sum of cross section areas as shown in the attached Figures 1(a) and 1(b), the particulates accumulate unevenly and cause a much higher temperature toward the end of the inlet through holes, thus making more susceptible to cracking in that portion. Applicants recognized the problem and found that by setting the aperture ratio and thermal capacities as recited in Claim 1, a honeycomb structure body is effectively prevented from such a cracking.

The outstanding Office Action states that the structure recited in Claim 1 is anticipated by or, in the alternative, obvious over WO '218 as any properties recited in Claim 1 is inherently satisfied by the structures disclosed in WO '218. However, WO '218 simply shows structures in which the inlet-side through holes and the outlet-side through holes have different sizes (large through holes and small through holes), and the reference does not teach or suggest setting their aperture ratios and/or the thermal capacities of the plugs sealing the through holes. Also, nowhere is WO '218 believed to expressly describe setting their aperture ratios and/or the thermal capacities of the plugs, and moreover, WO '218 does not recognize or address the uneven accumulation of particulates caused by its structure or the localized temperature rise and cracking caused thereby. As such, it is respectfully submitted that WO '218 is not believed to *necessarily* disclose the missing aperture ratios and thermal capacities recited in Claim 1 and that the reference does not teach or suggest "a porous ceramic body in which a plurality of through holes are formed in parallel with one another in a length direction of the porous body ..., wherein said plurality of through holes includes a group of inlet-side through holes sealed by plugs at the outlet side and a group of outlet-side through holes sealed by plugs at the inlet side, the inlet-side through holes have the total sum of cross section areas perpendicular to the length direction which is made relatively greater, the outlet-side through holes have the total sum of cross section areas perpendicular to the length direction which is made relatively smaller, and the inlet-side through holes and the plugs sealing the inlet-side through hole at the outlet side satisfy inequalities, $0.0157X - 0.0678 < Y < 1.15X - 5$ and $35 \leq X \leq 60$, where X represents an aperture rate on the inlet side in %, and Y represents the total sum of thermal capacities in J/K of the plugs sealing the inlet-side through holes at 500°C per 11.8 cm^2 of an end face of the ceramic body on the outlet side including the outlet-side through holes" as recited in Claim 1. Therefore, the structure recited in Claim 1 is believed to be distinguishable from WO '218 and is not

anticipated thereby. In addition, because WO '218 fails to disclose the relationship between the through hole and the plugs as recited in Claim 1, its teachings are not believed to render the structure recited in Claim 1 obvious.

For the foregoing reasons, Claim 1 is believed to be allowable. Furthermore, since Claims 2-13 depend directly or indirectly from Claim 1, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 2-13 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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Fig. 1(a)

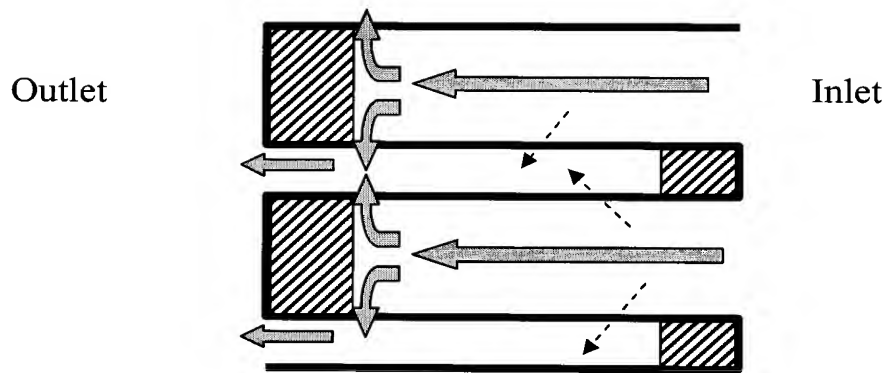


Fig. 1(b)

